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INTRODUCTION.

This REVIEW treats generally the meteorological conditions of the United States and Canada for June, 1888, and is based upon the reports of regular and voluntary observers of both countries. Descriptions of the storms that occurred over the north Atlantic Ocean are also given, and their approximate paths shown on chart i, on which also appears the distribution of icebergs and field-ice and the limits of fog-belts west of the fortieth meridian. The weather over the north Atlantic was unusually fine, and the depressions traced were deficient both in number and energy when compared with June average.

Over a large part of the country the mean temperature differed but slightly from the normal. The greatest deficiency occurred in the west gulf states and on the middle Pacific coast, and the greatest excess in the southern Rocky Mountain districts, Saint Lawrence Valley, and lower lake region.

The rainfall was largely in excess of the average in the northern districts from Lake Superior westward to the Pacific coast, and in the west Gulf states. It was decidedly below the average in the upper lake region, New England, the south

Atlantic states, and in the southern plateau. Elsewhere the departures from the average were not especially marked.

In the preparation of this REVIEW the following data, received up to July 20, 1888, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at 133 Signal Service stations and 22 Canadian stations, as telegraphed to this office; 175 monthly journals and 175 monthly means from the former and 22 monthly means from the latter; 344 monthly registers from voluntary observers; 61 monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the Hydrographic Office, United States Navy, and the "New York Herald Weather Service;" monthly weather reports from the local weather services of Alabama, Arkansas, Colorado, Illinois, Indiana, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New England, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, and Texas, and the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean pressure for June, 1888, determined from tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

An area of low mean pressure extends from Arizona and New Mexico north-northeastward to the British Possessions, within which area the barometric means range between 29.72 and 29.80, except over portions of Arizona and New Mexico, where the mean pressure slightly exceeds 29.8. It will be seen from the chart that this isobar of 29.8, showing the region last referred to, is inclosed by the isobar of 29.75, indicating a slight increase of pressure near the centre of the southern portion of the extended area of low mean pressure. To the eastward of the area of least pressure the barometric means increase gradually over the southern districts to 30.0, or slightly above, in the south Atlantic states, the difference between the means over the northern districts from the Rocky Mountains to New England being somewhat less marked. Westward of the area of minimum mean pressure to the Pacific coast the increase of pressure in proportion to the distance is about the same as to the eastward, the highest mean pressure, 29.96, occurring at San Francisco, Cal.

The departures from the normal pressure at the various Signal Service stations are given in the table of miscellaneous meteorological data. Throughout the United States and the adjacent portions of the British Possessions the mean pressure for June is below the normal, the departures being most marked from the Red River Valley of the North westward to the Pacific coast, where they range from .10 to .16, and least in California, where the pressure is nearly normal. East of

the Mississippi the departures are less than .05, except along the Atlantic coast from Virginia northward, where they slightly exceed .05. Over the southwestern portions of the country the pressure ranges from .05 to .09 below the normal.

Compared with the mean pressure of the preceding month, a very slight increase is shown over the central Mississippi valley and Southern States, while in all other districts the pressure for June is lower than that of May, the difference being greatest in the extreme northwest and northern Rocky Mountain slope, where it amounts to from .15 to .20.

BAROMETRIC RANGES.

The monthly barometric ranges at the various Signal Service stations are also given in the table of miscellaneous meteorological data. The monthly ranges are greatest in the extreme northwest and upper Missouri valley, where they exceed 1.00, the maximum, 1.21, occurring at Fort Totten, Dak.; they were, as usual, least along the Gulf and south Pacific coasts, where they were .40 or less, the least, .25, occurring at Key West, Fla. For the states bordering on the Atlantic the extreme ranges are .25 at Key West, Fla., and .73 at Portland, Me.; between the eightieth and ninetieth meridians, .41 at Cedar Keys, Fla., and .79 at Alpena, Mich.; between ninetieth and one hundredth meridians, .33 at Brownsville and Rio Grande City, Tex., and 1.21 at Fort Totten, Dak.; eastern slope of Rocky Mountains, .43 at Fort Davis, Tex., and .95 at Poplar River, Mont.; plateau region, .33 at Yuma, Ariz., and .71 at Salt Lake City, Utah; Pacific coast, .27 at San Diego, Cal., and .88 at Tatoosh Island, Wash.